Chapter 4
Frege: Senses in Context

Frege mentions indexicals in several passages, and his attempt to work out the details of how they fit with other aspects of his philosophy of language has provoked some of the most enlightening discussions of context sensitivity. Since Frege's theorizing about language began with mathematical uses of language, which he conceived to be completely immune to contextual influences, it is not surprising that his treatment of indexicals comes as something of an afterthought—an attempt to explain a recalcitrant anomaly of natural language using the resources of an already fully developed system. Nonetheless, his pronouncements concerning the meanings\(^1\) of sentences containing indexicals are very consistent throughout his writings and demand to be taken seriously.

In this chapter, an examination of Frege's remarks about indexicality and its relation to context leads to a negative assessment of the ability of Frege's theory of senses to account for common uses of indexicals. Nonetheless important Fregean insights about the objectivity of thoughts and meanings lead to new understandings of what semantic context can and cannot be like.

**Indexicals in Frege**

In arguing against psychologism in the introduction to the *Grundgesetze der Arithmetik*, Frege notes the peculiar behavior of sentences containing indexicals and gives the general outline of his way of treating them. Some philosophers, describing logic as "the laws of thought," had been tempted to admit psychological factors into the notion of truth, using as evidence the changing truth values of sentences, such as 'It is raining', 'I am hungry', etc., used to describe momentary personal observations.\(^2\) For Frege, this represented a confusion between the subjective psychological processes of thinking, which might involve *taking something to be true*, and the objective state of something *actually being true*. The supposed examples of subjectively relative truths typically contain indexicals, and Frege's reply amounts to a compact account of indexical meaning. He considers the case of the

---

\(^1\) Frege's technical use of *Bedeutung* makes terminological decisions inevitable. I will use 'reference' for Frege's technical application, so that 'meaning' can retain its ordinary range of colloquial uses.

\(^2\) Kasimir Twardowski, (in "On So-Called Relative Truths," in *Selected Writings*) gives an account of the meaning of statements containing indexicals which is contemporary with Frege's account and very similar in motivation and detail.
sentence 'I am hungry' which might be described as true for some men and false for others, or true in some circumstances and false in others.

The sentence [may vary in truth] but not the thought\(^3\); for the word 'I' in another's mouth refers to a different person, and so the sentence, when spoken by another, expresses a different thought. All specifications of space, time, etc. belong to the thought whose truth is under consideration: being true is itself placeless and timeless.\(^4\)

Thus the same sentence can express different thoughts on different occasions, because the thought expressed contains "specifications" not supplied by the sentence alone; this idea remained a stable part of Frege's view of meaning. In "Der Gedanke" he considers an example involving verb tense.

The utterance 'This tree is covered in green leaves' does not suffice, by itself, for the expression of a thought, for the time of the speaking also belongs to it. Without the time-specification, which it gives, we don't have a complete thought, that is, we don't have any thought at all. The sentence doesn't express a thought until it is provided with the time-specification and is complete in every respect. But if this is then true . . . it is timelessly true.\(^5\)

Essentially the same view is apparent in "Über Sinn und Bedeutung" where he says that in order to understand a sentence like 'Napoleon attacked the enemy position' as expressing a complete thought, time and place specifications must be added. In the usual case, he says, these are "known from the context, and thereby made determinate."\(^6\)

\(^3\) Throughout this chapter I use 'thought' to render Frege's Gedanke (I avoid the common rendering as 'proposition'). Frege is, of course, emphatic, for reasons that will be discussed below, that he uses the word in the sense of 'that which is thought', as opposed to das Denken, the psychological act of thinking. As we will see in Ch. 6, this distinction between the concrete act (thinking), and the abstract product (thought) provides an indispensable key to understanding the objectivity of reference. On the contrast between thinking and the thought see Twardowski's "Actions and Products" in Selected Writings.

\(^4\) Grundgesetze der Arithmetik, vol. i, pp. xvi-xvii; cf., W. & M. Kneale, Development of Logic, p. 590. All quotations from works cited under their German titles are my translations.


\(^6\) Op. cit., p. 44. In this passage Frege is explaining how the time specification required by the present tense of the verb is supplied, but the same account applies to an expression like 'this tree'. In "Logic in Mathematics" (Posthumous Writings, p. 213) he says: "The sentence I utter does not always contain everything that is necessary: a great deal has to be supplied by the context, by the gestures I make and the direction of my eyes . . . A
There are several points to note about this way of putting things. First, Frege is making some important distinctions. He distinguishes between: a) the meaning of an utterance (on a particular occasion, in a particular context); b) the meaning of the sentence which is being used, but which, considered on its own, might lack the ability to convey a thought, and which could be used on a different occasion to express a different thought; c) the thought which the utterance-in-context expresses, which might also be expressed by a different sentence used in the same or a different context; and d) the different contributions to the thought that are made, on the one hand by the sentence, and on the other, by specific features of the context. Secondly, Frege considers the thought to be the primary bearer of truth, so that an utterance of a sentence is true only derivatively—in virtue of the truth of the thought which it expresses. Finally, the thoughts expressed by such simple sentences as 'I am hungry', 'This tree is green', and 'Napoleon attacked the enemy' are required to include specifications (e.g. of time, place, and speaker) which are not discernable in, but are somehow presupposed by, the sentences which express them. He recognizes that certain expressions seem to carry with them an expectation that they be supplemented in particular ways to yield a thought. All of this provides clues to Frege's assumptions about the structure and operation of context.

In an important passage in "Der Gedanke" Frege offers a more detailed explanation of how an utterance comes to be completed so as to express a thought. He begins with verb tense and then generalizes to cover other cases of indexicality.

If the present tense makes a time-statement [as opposed to 'timeless' uses of the present tense] then one must know when the sentence was spoken in order to correctly grasp the thought. Thus the time of speaking is a part of the expression of the thought. If someone wants to say the same thing today that he said yesterday using the word 'today', he would have to replace this word with 'yesterday'. Although the thought is the same, the verbal expression must, in this case, be different, in order to counteract the change of sense which would otherwise be caused by the difference in the time of speaking. The situation is similar with words like 'here' and 'there'. In all such cases the bare utterance, as it could be captured in writing, is not the complete expression of the thought; but in addition one requires knowledge of certain circumstances which accompany the speaking, which are thus

concept-word combined with the demonstrative pronoun [e.g. 'that tree'] or definite article often has, in this way, the logical status of a proper name in that it serves to designate a single determinate object. But then it is not the concept-word alone, but the whole consisting of the concept-word together with the demonstrative pronoun and the accompanying circumstances which is to be understood as a proper name." This, of course, echoes Mill's remarks about 'the king.'
put to use as means of expression of the thought. These [means] also include finger-pointing, hand gestures, and glances.  

Clearly what Frege here calls "circumstances accompanying the speaking" is what, in the Napoleon example, he calls "context." The view expressed here is this: A sentence containing an indexical provides an incomplete thought which is somehow completed by knowledge of certain features of the context; without this completion it is "no thought at all." Generally, understanding certain kinds of words presupposes recognizing specific kinds of incompleteness in a thought and knowing how to extract the appropriate specification from the context in order to complete the thought. Let us think through one of Frege's examples to see what this "completing" might amount to, how it takes place, and the role that knowledge of contextual circumstances could play in it.  

Suppose someone said "I am now hungry" at noon, on January 1, 1900, and in so doing, expressed a true thought. What would be required for someone else to be able to grasp that thought? Hearing the sentence is not enough; a person could hear the sentence clearly from another room or on a recording and still not know what thought was being expressed. One requirement, of course, is that the hearer know enough English to understand the words themselves. In addition, she must know who the speaker is and when the utterance occurred. The words plus that knowledge are enough to determine the thought expressed. That thought has components that correspond to, but are not fully determined by, the components of that sentence. One component is the sense of 'x is hungry', and this sense is not affected by the circumstances of the use of that expression. On the other hand the contributions to the thought associated with 'I' and 'now' are affected by the circumstances of use and we can expect the sense of the utterance-in-context to have components which correspond to them. What sort of thing could these components be? Frege says only that they are "specifications".  

It might be suggested that these components could be just the speaker and the time of the utterance. But this is impossible, according to Frege's description of the composition of thoughts. In "Über Sinn und Bedeutung" he says that places and times are, from a logical point of view, objects, and in the same essay he implies that no objects, but only senses

---

7 P. 65.
8 I have added 'now' to the example to separate out for clarity the temporal significance of the present tense; 'x is hungry' can thus be treated as a timeless predicate.
9 P. 42.
can be parts of a thought. His description, in "Der Gedanke," of the metaphysical gulf between objects and the "third realm" of senses leaves no room for doubt. So 'I' and 'now', when used to express a thought, must correspond somehow to senses which are components of that thought. Following Frege, we can call these the "speaker specification" and "time specification." And on Frege's account, knowing who the speaker is and when the utterance takes place are enough to provide those specifications.

But there is still a serious problem if we are to identify the thought expressed by the utterance. As Russell insisted, knowing an object always has a perspectival aspect. Our knowledge of any object, whether concrete or abstract, is typically incomplete and involves "viewing" or "getting at" that object from a particular perspective. Partly, of course, this is because our knowledge of the world is mediated by our bodies and certain physiological and psychological processes. The physiological and psychological states in virtue of which one person perceives an object are necessarily distinct from those of every other person. Still, the fact that different people can have the same thought means that these individual variations, what Frege calls our ideas (Vorstellungen) of objects, are by-passed in grasping a thought.

Thus, when two people have the same thought about an object, that thought contains a sense of that object which they both have grasped. What is required for us to have a thought which is about an object is for that object to be given to us in a determinate way. The way of being given (Art und Weise des Gegebenseins, often translated 'mode of presentation') reflects the perspective from which the object is apprehended; it is contained in the sense of an expression which refers to that object and is indicated in a sentence which expresses that thought. The fact that thoughts can be grasped by more than one person means that objects can be given in ways that are accessible to more than one person, transcending the peculiarities of individual sensation. This notion of senses of objects

---

10 P. 35. This directly contradicts a suggestion by Gareth Evans in "Understanding Demonstratives" that a day might be a component in a Fregean sense of an utterance of a sentence containing 'today'. See below.

11 In "Über Sinn und Bedeutung" this thesis takes the form of the metaphysically innocent claim that all people who, for example, affirm the Pythagorean Theorem, have something in common. A thought is then taken to be whatever it is they have in common in virtue of that affirmation (see, e.g., p. 196). At this point, Frege seems to be satisfied that intersubjective availability is enough to insure the objectivity of the truth-content of statements; as we will see in Ch. 6, this is the crucial criterion of objectivity for Husserl. But by the time of "Der Gedanke" the wall between objective thoughts and subjective ideas is reinforced with the metaphysical doctrine of the "third realm" of senses with their own independent mode of being.
which are both perspectival and publicly accessible is central to Frege's contention that statements of empirical science can be objectively true. Frege illustrates this with the telescope analogy at "Über Sinn und Bedeutung." The optical image in the telescope is indeed one-sided and dependent upon the standpoint of observation; but it is still objective, inasmuch as it can be used by several observers." Our astronomical knowledge is about objects; our astronomical statements refer to those objects. But we get at those objects (they are "given" to us) perspectivally, e.g., through publicly accessible images in telescopes. "Being seen in a telescope pointed in such and such direction" is a "way of being given" for a star, planet or comet.

We may apply this to the case of the thought expressed by 'I am hungry.' Knowing who the speaker is must provide a sense of the speaker which contains such an objective mode of givenness. But Frege is clear that any particular object can be given in many different ways, and that thoughts about the same object will be different from one another if the senses of that object which they contain differ—that is, if they incorporate different modes of givenness. So understanding the thought expressed requires not just knowing the speaker in the context but knowing the speaker via a particular sense—under a particular mode of givenness; and this requires extracting from the context the one sense of the object which identifies the particular thought in question. Unfortunately, Frege does not explain how our knowledge of the circumstances surrounding an utterance accomplishes this.

Frege is not ignorant of the phenomenon which is the source of this problem. His Morning Star example shows that, since knowledge is perspectival, it is possible to know something about an object when it is given in one way but not know it when it is given in another. It is often not obvious that a single object is being given in different ways by different senses; the object seen in a telescope pointed in a given direction at one time may or may not be the object seen in a telescope pointed in a different direction at a different time. Frege, of course, motivates his sense/reference distinction with examples of important scientific discoveries that consist in sorting out just such cases. Scientist, like all of us, need ways of keeping track of objects in order to know what they are talking about; "discovering" a comet consists in recognizing that a single object is "given" in a series of telescope images, perhaps spread over many years. The epistemic value of true thoughts

\footnote{12 p. 30.}

\footnote{13 Frege's term here, Erkenntniswert, is usually translated 'cognitive significance'. Contemporary use of 'cognition' and 'cognitive' to cover a wide range of mental functions may lead to misunderstanding of Frege's point here. His concern is with knowledge (Erkenntnis), and the forms of expression required to express different items of knowledge. There are important issues about the meaning of indexicals which are currently being treated...}
about individual objects consists, not just in the information they contain about those objects themselves, but also in what they tell us about the ways in which those objects are or can be given. Thus, as Frege emphasizes, a theory of meaning must address both the goal of our referring acts—that about which we intend to communicate—and also the means at our disposal for reaching that goal—our ways of getting at those objects. It is perspectival ways of getting at objects which are the "modes of presentation" embodied in the senses of referring expressions. This applies just as much to thoughts expressed using indexicals as to those expressed using names and definite descriptions. In fact, since Frege considers times and places to be objects, the kinds of time and place specifications associated with indexicals will have to be conceived of on the model of other referring expressions, viz., proper names and definite descriptions. Sorting out how language and context figure in gaining and expressing knowledge thus brings us to consider Frege's general theory of singular terms and provides an opportunity to compare his views with those of Mill and Russell.

Senses of Singular Terms in Frege—Two Interpretations

There have been various view about how to understand Frege's account of the senses expressed by singular terms. These views fall roughly into two categories. Descriptivist interpretations hold that all senses of objects consist of descriptive content that specifies a particular object and distinguishes it from all other objects. The 'mode of givenness' of an object, on such a view, is linked to a collection of properties of that object which are publicly accessible, (at least potentially) verbally communicable, and sufficient to identify it. Although many readers of Frege have interpreted him as holding such a view, it is now almost universally recognized, both by friends and foes of Frege's overall approach, that a generalized descriptivism faces serious problems in regard to both proper names and indexicals. Russell was, as we have seen, explicitly descriptivist about ordinary proper names and all indexicals except 'this'. Although descriptivism has been characterized by John McDowell as the "stupid idea" that Fregean senses are always predicative in nature, under the heading of 'cognitive significance' but many of those issues are foreign to Frege's main concerns. Some of these issues are mentioned below in Ch. 9.

Eventually we will need to consider whether these means are adequate to achieve our referential goals. Russell, as we have seen, doubts that they ever are. Later in this chapter we will ask whether Frege can provide a more hopeful answer. For now, the task is to get clear about the role context plays in providing us with senses of objects of indexical reference.

See John McDowell's *Mind and World*, p. 107. McDowell thinks that Fregean senses are "conceptual" though not always predicative/descriptive, in spite of Frege's repeated
I will argue that such a view is actually clearly visible in Frege's examples, is well motivated by the problems he was most concerned with, and is consistent with his avowed strategy for solving those problems.

Far from being stupid, a descriptivist theory of reference seems well suited to characterize a large fragment of language use, including mathematics, logic, and much of physical science. Its problems first become visible, as we shall see, when it is generalized to cover uses of language which display indexicality. When this is done, the problems are indeed serious but subtle and interesting.

By contrast, a non-descriptivist interpretation of Fregean senses of objects would hold that, at least sometimes, those senses succeed in picking out an individual object while containing elements that are not descriptive in the way indicated above. I will argue that, although such a view may be needed to solve the problems raised by indexical reference, there is strong evidence that Frege did not hold such a view; furthermore, any such view that others might propose which does not violate very basic features of Frege's system would be just as incapable of solving the problems of indexicals as a descriptive notion of senses is.

Whatever general interest the question of non-descriptive senses may hold for the interpretation of Frege, it has a special significance for our investigation of his views on the meanings of context-sensitive expressions. The goal of this chapter is, first, to discover what context would have to be like to provide the kind of supplementation which Frege thinks is required for the expression of complete thoughts using indexicals, and then, to see what the advantages and disadvantages of such a model of context are. What we think that supplementation amounts to will depend on whether we take the senses involved to be descriptive or not. Accordingly, the remainder of the chapter is organized as follows: First, I consider a descriptivist interpretation of senses, presented in a way that emphasizes its attractiveness, given certain assumptions to which Frege is committed. Frege's account, so interpreted, is then compared with the views of Mill and Russell. Second, I use some remarks of Michael Dummett and Gareth Evans to explore how a non-descriptive notion of senses might fit into Frege's theory, but find that the suggested alternatives, when applied to indexicals, violate important Fregean principles. Next I sketch how context must function if it is to provide the senses of indexicals required by the descriptivist interpretation. The problems indexicals raise for Frege's theory, so understood, are then examined, following a line of argument developed by John Perry. This statements that the concept (Begriff), in his favored sense, is essentially predicative. See, e.g., "Über Begriff und Gegenstand", p. 193.
shows that some, but not all, aspects of the Fregean picture must be abandoned. Finally, I use the picture of sense-mediated indexical reference that emerges to work out some features of context which seem to be needed to safeguard the objectivity of language which was so important to Frege, and to separate those features from aspects of Frege's view which caused problems.

**The Case for Descriptive Senses for Indexicals**

Let us suppose, with Frege, that whenever someone says something that is true, that they have expressed a thought (whatever else they might have done or expressed in that act of speaking). Let us further suppose that true thoughts are timelessly true, independent of anyone's grasping them or taking them to be true—that they have a kind of being or existence which is independent of both physical objects and human mental processes—and that the same thought can be grasped by many individuals and passed from language to language and from one generation to another.\(^\text{16}\) Now, let us apply these assumptions to instances of ordinary speech by examining sentences containing the various kinds of singular terms.

Suppose my daughter arrives home from school and says "The square of the hypotenuse is always equal to the sum of the squares of the other two sides," and thereby tells me something true. I will pick up lots of information from what she said, including her pride of accomplishment and that they've gotten back to geometry at her school, but those things do not affect the truth of what she said. What does affect its truth is that (for anything which has a hypotenuse) the two expressions 'the square of the hypotenuse' and 'the sum of the squares of the other two sides' are both descriptions, in English, of the same thing (a determinate area), and that my daughter has joined them in an assertion form which expresses the claim that the same object is given by both descriptions.

In the normal case, and under our Fregean assumptions, the true thing she expressed and the true thing I understood were the same thought. This thought was true before it was expressed and would have been true whether it had been expressed or not. The thought contains, as components, the senses expressed by the two descriptive phrases; it is a true thought because both senses "present" the same (abstract) object. The explanation of the two of us grasping this one thought begins in our sharing a common language. No one can grasp this thought, as expressed using her sentence, without being able to understand the senses of the two descriptions it contains, and that requires understanding what a square is, what a hypotenuse is, and so forth. To understand what a square is is just to grasp the

---

\(^{16}\) These characteristics of Fregean thoughts are spelled out in *Der Gedanke.*
concept *square*. Grasping the concepts contained in the descriptions involves, in turn, grasping other concepts (*triangle, line, area*, etc.). But it is plausible, and Frege clearly believes, that part of what it is to learn a language is grasping these concepts while connecting them to the expressions of that language and the objects to which they apply. Learning the concept *triangle* may involve sensory contact with examples of triangular objects, but once the concept is grasped through these "hints and explanations," uses of the word designate the concept, not any of those objects. We each learn concepts from *different* examples and experiences, but we all grasp the same concepts. Once a variety of concept-words are learned, such expressions can be joined together to form expressions for complex concepts which can be used in definite descriptions to designate individual objects:

With the help of the definite article or demonstrative, language forms proper names out of concept-words. . . . If forming a proper name in this way is to be legitimate, the concept whose designation is used in its formation must satisfy two conditions: 1) It may not be empty; 2) Only one object may fall under it. . . . In science, the purpose of a proper name is to designate an object determinately; if this purpose is unfulfilled, the proper name has no justification in science.17

As long as the uniqueness requirement can be fulfilled, though, the potential for creating singular terms from concepts is enormous. This is especially true in light of the functional relations Frege recognized among these terms. A function-expression such as 'the father of x' creates a new singular term, a definite description, whenever a singular term referring to a person is given as argument. That argument may be either a proper name or another definite description. A distinctive feature of mathematics and geometry is that a small stock of concepts and functions can be combined to produce the endless supply of singular terms needed to designate all the objects studied by those disciplines. Even when proper names, such as π, e, and i, are used, they could, in principle, be eliminated in favor of descriptions. This careful use of descriptive singular terms guarantees that if the basic concepts are unambiguous, designation of objects will be unambiguous. It also guarantees that the truths discovered by these disciplines will be communicable to anyone who can grasp the basic concepts involved.

---

17 "On Schoenflies" in *Posthumous Writings*, 178f. Frege normally uses *Eigennamen*, 'proper names', to cover both ordinary proper names and complex descriptive referring terms. See also the passage from "Logic in Mathematics," quoted above in note 6, where he explains how demonstrative descriptions, which are, taken alone, ambiguous, can be used along with context to designate determinate objects, and thus be useful for scientific purposes.
Science can also use complex descriptive expressions to express the co-instantiation, in concrete objects, of the complex properties which correspond to complex descriptions. "The center of mass of the solar system is one of the foci of the elliptical orbits of the planets" is an example. A limited stock of concepts can be combined to express an unlimited variety of thoughts. And because the concepts involved do not depend for their learnability on any specific objects, there is no restriction on who can learn them, and thus on who can grasp the complex thoughts expressed with them. Those truths can become part of the common treasure of thoughts which humanity can pass from generation to generation. One of those thoughts is the one my daughter expressed with her English version of the Pythagorean Theorem. This picture of language, based on concepts, concept-words and descriptive singular terms would seem to be enough to provide an explanation of the meanings of all the statements of mathematics and geometry, and of much of physics, chemistry and astronomy as well.

Now suppose my daughter comes home and says "Aristotle was a prolific philosopher." Again she has said something true, and on our assumptions she has again expressed a thought. Part of the explanation for her being able to express, and my being able to understand, that thought comes from our mutual grasp of the concepts prolific and philosopher, and of the predicative form of assertion. But what about 'Aristotle'? 'Aristotle' is not a concept-word, nor is it, like the complex referring parts of the Pythagorean Theorem, composed of concept-words. How has she learned to use it to express a thought? Frege once again suggests a plausible explanation: knowing a language includes knowing the meanings of certain proper names, and this in turn involves learning identifying truths about the things named. Thus 'Aristotle' might be taken to mean 'The student of Plato who was born in Stagira and became the teacher of Alexander the Great.' What makes this plausible is that we really do learn the use of many names in the course of learning things about those who bear those names. Furthermore, with many names, those

---

18 As Frege notes in "Compound Thoughts", p. 390: "Even if a thought has been grasped by an inhabitant of the Earth for the very first time, a form of words can be found in which it will be understood by someone else to whom it is entirely new."
19 Cf. "Über Sinn und Bedeutung," p. 27, text and note. That the expression of the descriptive sense also contains proper names, means, of course, that this is not the end of the story for fixing the sense of 'Aristotle' descriptively. One can only imagine Frege's response if asked what the sense of 'Plato' is, as used in describing the sense of 'Aristotle'. The important point is that this did not seem to have struck Frege as a difficulty, and there seem to be congenial ways, mentioned below, to get quite a long way toward eliminating names altogether.
things tend to be pretty standard throughout a language community. Finally, whenever there is any doubt about who someone means by a name, the way to resolve the doubt is by asking "Do you mean the one who was such-and-such?" or by asking "Who do you mean?" with the expectation of being told further clarifying truths.

This explanation applies well, not only to names of historical figures, which necessarily rely on verbal transmission from past generations, but also to names of members of one's local community, which are often understood even in the absence of personal acquaintance. In Frege's Dr. Lauben example, Herbert Garner is able to use the name 'Gustav Lauben' with the sense 'the only one born on Sept. 13, 1875, in N.N.' without ever having met the man. Anyone else who knew the same thing about him could understand any thought Garner expressed using that name. A single functional expression, 'nth child of x', along with the descriptions 'first female human' and 'first male human' and the positive integers, could be expected to yield identifying descriptions for every human being. Such elegant universality is not really necessary, though. Using birth dates, and birth places, not to mention street addresses and occupations, and the concept 'being a person called "x"', we already have powerful descriptive tools for identifying persons, and thus for expressing and recording thoughts about them. Similar strategies apply for other kinds of objects.

Here we can recall Mill's problem about proper names and how he went about solving it. He noted that a single name like 'Maria' could be used to refer to many different people. He first responded to this problem by saying that when names are so used, they are not used in the same sense. He was then faced with a choice between two explanations of this situation. Either the name, on different occasions, had different senses, or on every occasion it had no sense at all. Mill (and Russell, and direct reference theorists after him) chose the latter answer. This route, however, was not open to Frege. Every truth is a thought, and truths having to do with individual objects can be expressed by sentences which contain proper names. And since thoughts are senses, and only senses can be parts of senses, the names must contribute senses to the thoughts which they help express. With natural language this can lead to problems, since a single object can have different names, and a single name can express different senses. Thus Frege's sense-based solution to Mill's

---

20 Cf. "Der Gedanke," p. 65. I will not rehearse the details of this complex and much discussed example here, but will assume general familiarity with it in the discussion which follows.

21 Frege's remarks about making language usable for scientific purposes presuppose developing practices which allow the use of singular terms with definite senses, and the generalized descriptive practices suggested here, if uniformly used, would result in thoughts to serve as the kind of common subject matter for science which Frege requires.
The theory of sense and reference not only attempts to solve these problems, but also holds out the hope that the ambiguities of multiple senses can be avoided altogether in a carefully constructed language. Although Frege recognizes that natural language is full of ambiguities, he is confident that a notation such as his Begriffsschrift, which displays the pure conceptual structure of language, can open the way to progressive steps toward Leibniz's dream of unambiguous description of objects, starting with mathematics and then moving through geometry to mechanics, physics, chemistry, etc. Frege did not, as Leibniz had done, underestimate the difficulty of such a sweeping program, but pursuing this program clearly provided part of the initial, and apparently continuing, motivation for his philosophical investigation of language. Descriptive senses of names fit perfectly into this program. Improving language for scientific purposes means, among other things, insuring that proper names, when used, have a single clearly defined sense. For such an improvement to be possible, the senses of names must be communicable (otherwise how could one check whether a name was being used in the same sense?). But pending an ideal language, Frege expects that context will sort out the senses of names in exactly the way Mill claims context can sort out their references. A name like 'Aristotle' or a definite description like 'the present king of this land' can unambiguously refer to a single individual only when the context can supply sufficient information to allow one to grasp the particularity of that individual.

On Frege's view, there is guaranteed to be a sense, however complex, based only on the properties of each object, by which its particularity can be grasped. He says that for every property of every object there is a true sense which consists of the predication of that property of that object. Only human ignorance, and nothing in the nature of language, stands in the way of our using those senses to specify any given object. Knowledge of

---

22 See the "Preface" to the Conceptual Notation for Frege's bold statement of the step-by-step clarification of science through the application of techniques for the expression of "pure thought" i.e. pertaining to "relations which are independent of the particular state of things." He believes that adding symbols for the specialized intuitive or empirical concepts of geometry, mechanics, physics, etc., would allow the progressively wider application of the analytic techniques he developed for mathematics.

23 Cf. "Was ist eine Funktion", pp. 657-9, where he says that we cannot apply a proper name unless we can comprehend the object in its particularity, and where he talks about the descriptive time specifications required by definite descriptions to achieve reference.

24 In thinking this Frege reflects an (at that time wide-spread) optimism about the ability of science to pin down descriptively the truths of the world to any desired level of specificity.
the context is what provides knowledge of the properties of objects and this knowledge is expressed in linguistic descriptions of those objects, which can thus express the senses needed to grasp thoughts about them. Thus Frege has in hand both the motivation and, one might suppose, the means to extend the conceptual-descriptive notion of senses to cover proper names.

Now, suppose my son pipes up and says: "Napoleon personally led the troops attacking the enemy position." His utterance does not contain enough information to determine whether what he said is true or false. There are some references which need to be pinned down, but there are also strategies available which accord well with what Frege says about contextual supplementation. Usually what he says context provides are "place and time specifications." If I had been in my son's class, I might have already picked them up, but I can get them from my son by asking a few questions: "Where did that happen?" "When did that happen?" "Which enemy position was it?" (I might even need to ask "Which Napoleon was that?") The incomplete thought expressed by 'Napoleon attacked the enemy position' can thus be completed by drawing from the context the date and location of the battle intended. If my son has mastered our standard way of specifying times and places, he might try to precisely express a complete thought with: 'At 3:00pm on XX, 1814, at Latitude XX, Longitude XX, the shortest emperor of the 19th Century attacked the most heavily defended position within a 10 km. radius'. Although the amount of information used to identify the objects, times, events, and places involved can be expanded without limit, all that is really needed to insure that those who use and those who hear a sentence understand the same thought is that they share enough descriptive information to pick out definite objects. The thought thus obtained is determinate enough

Max Weber, in 1919, characterized this attitude as the belief, not in humans ever actually knowing the exact condition of the world, but "in the possibility of being able to know those conditions at any time we would like to know them. That is, it is assumed that the phenomena in the world are not ruled by any mysterious powers, unknown to us and incalculable by us, but that everything can be explained and dominated, in principle, by rational calculation." ("Wissenschaft als Beruf," in Schriften zur Wissenschaftslehre, ed. by M. Sukale, Stuttgart, 1991, p. 250. Translation by Otto Neumaier.) As we shall see in Ch. 6, Husserl, in his early works, also held this optimistic view of the "unbounded reach of human reason"—with troubling results for his theory of indexical reference.

This seems to be the gist of the remark ("Der Gedanke", p. 65) that as long as Rudolph Lingens and Leo Peter both know where Gustav Lauben lives and that he's the only doctor living there, they can both grasp a common thought about him, regardless of what additional individual information one or the other might have. A sufficient condition for grasping a
to have a truth-value and conceptual enough to be accessible to any sufficiently proficient
language user. This kind of explanation, using supplementary descriptive information
obtained from context by applying standardized forms of specification, can seemingly be
used to account for the meaningfulness of references to places and events, both historical
and contemporary, still without making the grasping of senses or thoughts dependent upon
concrete psychological acts of perceptual contact with any particular objects.

Now suppose my daughter comes home with the news "Rita got a new skateboard." To
understand the thought she is expressing I need to ask, "Who's Rita?" Although there is no
standardized method for specifying one's acquaintances, there are actually plenty of ways
to answer that question, any of which might do the trick. I want to focus, however, on two
possibilities, one using only conceptually based descriptions, and the other using sensory
observation and memory.

"She's the girl who just started in my class on Tuesday" would give me a description that
would single Rita out and which I could use to communicate about Rita to anyone else who
knows which class my daughter is in. For communicating with others, I could substitute a
more explicit description of that class. (My knowledge of the identifying properties of that
class are part of the context of this utterance. I can use what I know about the class to
make up for what my audience doesn't.) Grasping the thought my daughter expressed
looks like a two step process: learning an identifying sense for 'Rita' and then using that
sense to grasp a thought about her.

A second choice for an answer to "Who's Rita?" would be "She's the girl you saw at the
school bus stop this morning." Here again I'm learning who Rita is, but based on my
personal perceptual experiences and memory, in addition to my grasp of certain concepts.
This answer would enable me to know who Rita is, but it wouldn't help me communicate
about her to anyone else who hadn't seen her at the bus stop. Still, I could parlay what I
knew about her presence at the bus stop into a identifying description, drawing on my
knowledge of the place and time involved and of standard ways of specifying them. There
is usually plenty of publicly available information to substitute for a perception-dependent
identification. I may be satisfied with my perceptual memories for an identification of Rita,
but to grasp the determinate thought which my daughter expressed (on our Fregean
assumptions), I must use a sense which determines her independently of my personal
mental contents. It is my descriptive knowledge of the situation to which those memories

common thought about an object would be a common core of identifying descriptive
information.
pertain which would allow me to grasp such a sense and thus the thought of which it is a part. This very thought is then also communicable and graspable by others.

Here, reaching the thought required a three step process. First my daughter's answer directed me, via my private perceptual memories, to specific objects—places and times. Next I used my knowledge of those objects to form standardized descriptions to produce a determinate description of Rita. Finally I used that descriptive sense of Rita to grasp a thought which is independent of my perceptions and memories. So far, so good, it seems.

Now let us consider an example involving an indexical. Suppose my daughter comes home and says "I'm hungry." Once again she has said something that could be true, so once again we can enquire about the thought she has expressed. The sense of 'x is hungry' is explained, as usual, by our common grasping of a concept. The time specification demanded by the episodic nature of hunger can, one might suppose, be supplied by giving a date and time, as in the Napoleon case. But how to explain the meaning of 'I'? What sense does it contribute to the thought being expressed?

The Gustav Lauben case is intended to show the difference between the way names work and the way indexicals work. It can be interpreted in a way that is descriptivist, plausible, and fits well with Frege's overall program. One thing that the example shows is that information sufficient for understanding the name of an object may not be sufficient for understanding reference to it with an indexical. Specifically, knowledge of a person which falls short of personal acquaintance can still be enough to allow reference via a name, but not enough to grasp the sense expressed by an utterance of 'I'. Both Leo Peter and Rudolph Lingens know Lauben's address and occupation, so they can both grasp the same thought when they hear 'Dr. Lauben was wounded'. But things are different if Lauben is referred to with an indexical. The two of them heard Lauben himself say "I was wounded" and both grasped, Frege says, the thought he was expressing. Peter knew the speaker was called 'Lauben' but Lingens did not. Suppose that later in the week, Peter had said to Lingens, "The bearded fellow that we were talking to at the cafe on Monday was wounded." Since, as Frege stipulates, Lingens remembered that event, he would believe what Peter had just said if and only if he believed what Lauben himself had said using 'I'. Thus Pater would have succeeded in expressing the same thought that Lingens had expressed. This does not happen, however, when Peter says "Dr. Lauben was wounded." Because Lingens does not know that the one who spoke to them on Monday is called 'Lauben', he can believe the one utterance and doubt the other. Frege takes this to prove that the same thought was not expressed by Peter using the name 'Lauben' that was expressed by Lauben using the indexical 'I'. It is important to see that Peter could have
succeeded in expressing the same thought (since he knew plenty of descriptive information about Lauben that he could have communicated to Lingens).\textsuperscript{26}

Frege accepts that it is a normal situation with natural language that utterances of sentences require supplementation from context in order to express definite thoughts. This applies to sentences containing definite descriptions and names as much as to those containing indexicals. When Peter failed to express the thought Lauben expressed, it is not because Lauben used 'I' and Peter used 'Dr. Lauben', it is because there was something missing from the context which could have supplemented his utterance in the way required to express that specific thought. What was missing was something that was part of Peter's own understanding of the expression 'Dr. Lauben' but not of Lingens, namely, that the bearded fellow who spoke to them both at the cafe on Monday answered to 'Lauben'.

Personal acquaintance undeniably plays an important part in grasping certain senses and it is important to see how it could do this even when the senses of objects relevant to communicable thoughts are taken to be purely descriptive in the way now under consideration. Frege says that Lauben could have used 'I' with the sense of 'the one who is right now speaking to you'. Someone who heard him say this and understood the language could understand the thought he was expressing because the circumstances surrounding the utterance were available to supplement the sense of 'I'; they could do that precisely because those circumstances were also available to supplement the sense of 'the one who is right now speaking to you'. But the supplementation available depends on what is there in the context to do the supplementing. Anyone who perceives the utterance and its physical surrounding can, we may plausibly assume, provide lots of descriptive information about the place, the time and the speaker. The common perceptual information about the utterance situation is sufficient, Frege thinks, to allow those hearing Lauben's remark to understand the thought he is expressing if 'I' has the sense which 'the one now speaking to you' would have in the same circumstances. This sense would be one which was contextually filled out with all the relevant specifications.\textsuperscript{27}

---

\textsuperscript{26} This way of reading the example is supported by Frege's statement in the previous paragraph that the same thought expressed on one day with 'today' can be expressed on the next day with 'yesterday'. I'm assuming that the reason this is so is that the knowledge present in the two different contexts is sufficient, on Frege's assumptions, to provide the same time specification to supplement each utterance, just as common knowledge of the incident in the cafe suffices to identify Lauben.

\textsuperscript{27} On this interpretation, Lauben is using 'I' with the sense of a specific definite description, but 'the one who is now speaking to you' is not that description, but points the hearer to the elements of context, knowledge of which will provide that description. This means that 'You are wounded' and 'I am wounded' can express the same thought, since 'you' addressed
On this descriptivist view of senses, the contribution which names and indexicals make to the thoughts they are used to express—the senses they provide in context—can be exactly the same. The difference between them is how they make those contributions. They both rely on supplementation from context but they get supplemented in different ways. Learning a proper name involves having sufficient information about a specific object, the bearer of that name, to be able to provide an identifying description if needed. This information is available from the context in the sense that it is contained in the memories of those who know how to use those names. Since we know names both of those we have met and of those we have not, this information may or may not draw on present perceptions or perceptual memories. A particular utterance of a name will succeed in expressing the thought intended by the speaker when the audience members in the context are able to connect the name with the same identifying description as the speaker.\textsuperscript{28}

Learning to use an indexical, on the other hand, does not involve learning information about any particular object, but it does involve learning some general information about features which surround the use of language—e.g., what it is to be a speaker and to be spoken to, at a time and in a place. It also involves learning procedures, perhaps standardized, for describing times, places and objects. A particular utterance of an indexical will succeed in expressing the speaker's thought if the audience is able to provide descriptive identification of the relevant contextual features—those which the indexical in question "makes available to the speaker for the expression of that thought." What this requires is that the audience members have perceptual access to the utterance context, know which features of the context they are being directed to by the indexical, and how to extract descriptions of those features. Whereas the use of a name can get its supplementation from knowledge contained in memory, uses of indexicals must get their supplementation from perception that is occurring at the time the indexical is understood. Nonetheless, what goes into the thought is not the perception, but the sense of a description based on that perception.

to Lauben directs the hearer to construct a description of the same object as would 'I' spoken by Lauben; note that this 'you' would also have the same sense as 'the one now being spoken to' in that context. \textsuperscript{28} If the descriptions don't overlap in the right way, different senses will be grasped, but if they refer to the same object, Frege says, no harm is done. But this optimistic attitude involves overlooking deep difficulties around knowing whether the senses co-refer. These difficulties are discussed below.
So much for our descriptivist interpretation of Frege's remarks on indexicals and context. What makes this interpretation attractive is that, assuming it were possible to work out the details of how language users are able to use context to provide the required descriptive senses for indexicals, it would extend the general account of singular reference and the truth-bearing properties of language, which works so well in the purely conceptual realm of mathematics and geometry, to cover natural language uses of all three kinds of singular terms. This would give us a uniform account of the senses of objects which are contained in timeless thoughts, and cover the entire range of "things for which the question of truth arises at all." This is just what Frege says that he hopes his conceptual analysis of language and thought would make possible.

This picture of singular terms provides an interesting contrast to those of Mill and Russell. Mill allows for two independent kinds of singular terms—descriptive ones which denote through their conceptual connotations, and proper names which denote directly. But we saw that in explaining the denotation relation, he relied on the referring ability of indexicals, thus making the meanings of proper names dependent on them. Russell, for his part, gives an explicit and orderly reduction of singular reference to indexical meaning: Ordinary proper names give way to definite descriptions, which become expressions with bound variables. In applying this analysis to language with empirical content, the variables have referential significance because of their connection with the primitive indexical reference of the "logically proper name" 'this'. Thus for Russell all singular reference eventually reduces to indexical reference. The interpretation of Frege which we have been considering, by contrast, makes definite descriptions the basic kind of referring term, and explains the meanings both of proper names and of indexicals in terms of them. On this interpretation, an important difference between the referring capacities of names and indexicals is how context functions to link them with the appropriate definite descriptions.

**Alternatives to Descriptive Senses for Names and Indexicals**

But is this the right way to understand Frege? Other philosophers have shared Frege's hope of extending his logical analysis of language to ever larger portions of natural language, but work on fleshing out the account of the meanings of names and indexicals has uncovered serious problems with a descriptivist interpretation of their senses. This has led some philosophers of language to consider the possibility that the senses contributed by uses of names and indexicals might not be descriptive in the way described above but could nonetheless be components of Fregean thoughts. Michael Dummett, for example, arguing against Kripke's attribution to Frege of the doctrine that "the sense of a proper name is
always the same as that of some one definite description," summarizes his own interpretation as follows:

Frege made no explicit statement to this effect, and it is extremely dubious that he supposed such a thing. It is true that in giving examples of possible senses that may be associated with a proper name, Frege expresses these by means of definite descriptions; but this should be considered as merely a device for a brief characterization of a sense. . . . What is important about Frege's theory is that a proper name, if it is to be considered as having a determinate sense, must have associated with it a specific criterion for recognizing a given object as the referent of the name; the referent of the name, if any, is whatever object satisfies that criterion.29

Gareth Evans follows Dummett in rejecting the descriptivist interpretation of Frege, but disagrees about what a name's having a sense involves.30 Instead of taking the sense of a name to be a criterion for an object's identification or recognition (which he thinks would commit Frege to an objectionable verificationism), he thinks the sense of a name is better thought of as an "account" of what makes a particular use of a name be about a particular object. If the same account explains why two utterances of a name are about the same object, then those two utterances have the same sense. The point for both Dummett and Evans is that while senses (whether considered as "criteria of identification" or as "accounts") may be purely descriptive they need not be. This would only be a live alternative to the descriptivist interpretation if there were credible examples of non-descriptive senses of names or indexicals which do not violate fundamental Fregean principles about the nature of senses. But such examples are not forthcoming. When we examine the examples of such senses that have been given, we find that they violate Frege's demand that thoughts occupy a third realm entirely distinct from physical objects and psychological events and processes.

Dummett gives little indication of what he would consider to be a "criterion for identifying a particular object as referent" which would not qualify as a description. He says "we may appeal to any part of our knowledge [about the object for which a name stands] in order to determine whether or not an object presented to us is to be identified

29 Frege, p. 110.
30 Varieties of Reverence, p. 17n. and p. 20. Dummett is concerned only with senses of proper names, while Evans deals with both proper names and demonstratives. The reason for considering their defense of Frege's notion of senses is to give a fair hearing to non-descriptivist accounts. Theirs are the most plausible I have found.
with the bearer of the name." But what sort of knowledge do we have about the bearer of a name that is not based upon that object having certain properties? If it is an object we have never encountered, our knowledge of it will have been obtained verbally and, if its name has a definite sense for us, that knowledge will be statable as a description. If it is an object with which we are acquainted, our knowledge of it, presumably, must be of one of three kinds: 1) verbal knowledge obtained from others, 2) descriptive knowledge derived from our sensory contact with the object, and 3) other information which we have about the object but "can't put into words." It is only knowledge that falls into this last category which could constitute the non-descriptive way of recognizing an object which Dummett has in mind. It is, in fact, highly plausible that normal humans (and other animals), using perceptual memory, can recognize many objects which they cannot describe. But this kind of knowledge, dependent as it is on individual memory and other psychological processes, is explicitly excluded by Frege from the third realm of senses. This recognitional ability is undoubtedly very important in our use of names and other expressions, and will play a role in the theory of context developed later in this work, but assimilating this knowledge to Frege's notion of the sense of an object violates one of his underlying principles. Frege insists that senses are not subjective psychological states or capacities—nor are any parts of senses. Thus a sense of an object cannot be, or presuppose, a memory or perception of that object.

When Evans gives an example of what he might accept as an "account" of why an expression refers to a particular object, he speaks of "ways of thinking of that object." Two people grasp the same thought about an object only if they are thinking of that object "in the same way." This actually fits very well with Frege's telescope analogy of the objectivity of senses; two people can have the same sense of a planet if they both see it "in the same way"—by looking in a telescope pointed in such and such a direction at such and such a time. In the case of indexical thoughts, Evans thinks, the sense of the time or place contained in the expressed thought is a "way of thinking" that thought which involves being at a particular spatio-temporal location. He says that someone's understanding the thought expressed using 'today' "depends upon his being alive on that day," that understanding a

---

32 In fact, it has already been noted in Ch. 3 that 'propositional knowledge' may turn out in very many cases to depend on this kind of 'non-propositional knowledge'. The problem at issue here is whether there is any way to account for this dependence within Frege's understanding of thoughts and the senses they contain.
thought expressed with 'here' depends upon his having "a disposition which he can have vis-a-vis just one place in the universe in virtue of his occupying it."³⁴ He characterizes Frege's remarks about 'yesterday', 'today', 'here' and 'there' by saying: "Frege may well have glimpsed what results when the notion [of a thought] is extended to the sphere of human thinking which depends upon the position human beings have in space and time."³⁵ But Frege is at pains to distinguish what he calls thoughts, which have a kind of being which is timeless and independent of any existent object, from any human thinking, precisely because that thinking is dependent upon the specificities of human existence and psychology. That Evans' proposed senses violate this isolation of thoughts in the third realm becomes obvious when he makes explicit what a thought, under his proposal, would be like.

A Fregean thought of the kind associated with a sentence 'Today is F' said on d can be equated with . . . the [set theoretic] triple:

\[ <d, \lambda x \lambda y (R(x,y)), \text{Sense of } \langle \xi \rangle \text{ is } F'>,³⁶

Here the day d itself is taken as an element of the ordered triple which is the thought. But Frege is clear that objects cannot be parts of thoughts, nor can they be parts of the senses of which thoughts are composed. But if the sense in question really is individuated by those who grasp it existing at a particular time or place, there seems to be no non-descriptive way to specify that sense which does not make those objects part of the thought. Evans, like Dummett has noticed something important about our use of names and indexicals: that their meanings are intimately tied to events of particular humans experiencing particular objects. But this insight cannot be expressed in terms of timeless truth-bearers that exist independently of objects and psychological processes, which is what integrating it into a Fregean notion of senses would require.

Thus Dummett's suggestion violates Frege's isolation of thoughts in the third realm by including reference to psychological processes in the senses of objects; Evans violates it in a different way, by making demonstrative thoughts a hybrid of concepts and physical objects.

We are faced with a strange consensus; both supporters and opponents of Frege's notion of sense agree that purely descriptive senses aren't enough to explain names and indexicals. Opponents, accordingly, attack Frege for holding a descriptive theory, while supporters

³⁴ "Understanding Demonstratives," p. 81.
³⁵ Ibid., p. 84.
³⁶ Ibid., p. 91.
argue that Frege never held such a theory. If descriptivism is as obviously implausible as Dummett, Evans and McDowell think, and if there is no alternative which is consistent with Frege's general notion of a sense, why investigate what a theory of descriptive senses implies about the meaning of indexicals and the structure of context? Either Frege was wrong because he did hold a descriptive theory, or he was wrong because he held a non-descriptive theory which was inconsistent with his doctrine of independently existing thoughts.

There are, in fact, several good reasons for pushing on with the investigation of Fregean context. Descriptivism has often been attributed to Frege by careful and influential commentators, so it represents, prima facie, one plausible option, which deserves notice just in the interest of thoroughness. Furthermore, since forms of descriptivism have apparently been held by others, it seems worthwhile to investigate why it might be thought to be right. And even if it is wrong, it will still be important to say why it is wrong; as it happens, it is wrong for very interesting reasons. The theory of reference based on descriptive senses is well motivated within a particular view of language and knowledge and this explains its influence on later views about language, propositions and propositional attitudes, and the place of indexicality in ordinary language. For example, Quine's method for the treatment of indexicals in a regimented language, as we shall see, is a carefully worked out development of such a view; the problems facing a descriptivist theory illustrate how certain features of language can be invisible when only the "eternal sentences" of a language are considered.

And so, without claiming to have proven conclusively that this was Frege's considered position, I will henceforth assume a descriptivist interpretation of Fregean senses of objects; I offer the following justifications: although he never articulates such a position in detail, his examples clearly suggest it; it works just right for the mathematical fragment of language which was his starting point; it is consistent with the general principles of his picture of language and his ambition for providing an analysis of language which could be extended from logic and mathematics to empirical science; no similarly consistent alternative interpretation has been suggested; finally, its fundamental flaws are shared by other important theories of indexicality.

**A Fregean Context for Indexical Reference**

Based on the examples of contextual supplementation we have so far examined, we are in position to say what context must be like for a sense-based account of indexical reference to work. Context must contain objects, senses and thinking agents (denizens of the three
There are specific constraints on what these components must be like. The objects, including places and times, must have properties which distinguish them from one another. Included among the senses must be timeless and independently existing thoughts, which each have the property of being true or false, and some of which have, as components, senses which specify objects by means of their distinguishing properties. For every property of every object there will be a true thought which predicates that property of that object. Finally, the agents must have certain capacities. They must know a common language which will include grasping concepts (and thus being able to determine, for a given object, whether it falls under a concept), and connecting those concepts to expressions of the language. Grasping and applying concepts will sometimes require sensory perception, but these agents must also be equipped with a non-sensory capacity which allows them to grasp senses of objects they have not experienced (including, for example, abstract objects, such as triangles). These capacities are enough to grasp and communicate thoughts constructed only of conceptual components. The agents may have idiosyncratic psychological states and processes which play a role in the learning of language and grasping of concepts and thoughts, but these would not affect the truth-values of thought or the referential relations of the singular terms which enter into those thoughts, and so need not be active parts of context.

A context which contains components of these kinds provides the basis for the following explanation of context-sensitive meaning: Understanding a sentence containing indexicals is just a special case of grasping concepts and thoughts. Part of grasping a concept is knowing what other kinds of senses it needs to combine with in order to form a complete thought. Grasping a thought, then, becomes possible in two way. A complex expression may contain components which are connected with all the concepts required to make up that thought, or the expression may lack some component but contain expressions which direct the language user to features of the context which can supply those missing components. Those components can either be retrieved ready-made from memories about those features or can be made up on the spot based on perception. Learning a language could include learning standardized ways of retrieving and specifying those components. The means by which these components are obtained, whether explicitly thorough the expressions used, or supplementally from memory or perception would not affect the intrinsic properties of the senses or of the thought being grasped. Two agents who grasp the same components, related in the same way, would thereby grasp the same thought.37 A

37 The examples considered above in the section called "The Case for Descriptive Senses" illustrate explanations of this kind.
context with this structure, containing agents, objects and senses of the kinds described, and functioning in this way has everything needed to perform all the jobs Frege thinks context is able to do.

There are things about this picture of context which make it preferable to the one we met with in Russell. A Russelian context, in which the reference of 'that' is determined by a solitary agent's directing her attention at one of the sense data with which she is presented at a particular moment, is simply not recognizable as a mechanism adequate for fixing the meanings of expressions of a public language. Although the notion of directed attention may prove indispensable for explaining the selectiveness of demonstrative reference, the essential subjectivity of Russell's model, as we have seen, dooms any hope of shareable meaning or knowledge. The realization of this flaw forces a move in the direction of an objective, public model of context like the one we have found in Frege, one which may contain many agents, and objects which are accessible to all.

But is Frege's model recognizable as the kind of context in which we use natural language? Specifically do we, as language users, have the capacities required by this picture? The attempt to answer that question reveals deep problems with Frege's underlying system, problems that go beyond indexical reference to very general features of meaning in natural language.

The Trouble with Descriptive Senses in Context

If context is to do the supplementing job required to make Frege's account of indexical meaning work it must supply language users with the right amount of information of a very particular sort—descriptive "specifications" of objects of reference. But our actual experience with using indexicals can be used to show that context cannot and need not supply the sort of information Frege's theory requires.

Often context cannot supply enough information to meet the uniqueness requirement on singular terms. Frege requires that a thought which is about an object contain a sense which unambiguously identifies that object. We have seen that the only plausible candidates for such senses are constructed from concepts by using the sense of the definite article to convert an unsaturated complex concept into a saturated singular sense. Such a singular sense meets all the requirements of objectivity, learnability, and timeless independent existence required of a component of a thought, and at the same time it can be known to designate an object, if the complex concept it connotes can be known to apply to that one object alone. Russell had a knack for constructing verbal descriptions which were applicable to only one object; knowing that there have been people born in England during a
given year guarantees that there is someone who was "the first born during that year." But such intuitively unique descriptions are of no use in explaining the uniqueness of indexical reference, where the point is not to know that there is only one such-and-such, but rather that this is the only such-and-such. This can only be known by determining that a perceptually verifiable description which applies to this object does not apply to anything else. There will never be enough information in the context of an utterance to make this determination, unless context is taken to include all existing objects and knowledge of context is taken to include knowledge of all objects. But we know how to use indexicals to make determinate truth claims without depending on any such vast store of knowledge. So how is it that we can express true thoughts using indexicals?

Clearly 'This is red' and 'I am wounded' can be used to say true things. The failure of context to provide enough information to apply the kinds of determinate senses that Frege's theory requires is apparently not an obstacle to expressing determinate objective truths using indexicals. Perhaps this is because the senses which that information would support are simply not the senses which are normally expressed when we use and understand indexicals in context. One way to answer this would be to employ Frege's criterion for distinguishing between senses to see if the senses expressed by these two are the same or different; this criterion is revealed in Frege's account of how senses of singular terms contribute to the senses of sentences (i.e., "thoughts").

John Perry has pointed out that if a "mode of presentation" is taken to be linked to a uniquely satisfiable condition on objects (i.e., a set of properties which identify a specific object) then important consequences follow from Frege's including such a mode of presentation in the thoughts which are the timeless truth-content expressed by sentences.38 Perry points out that Frege has created a problem for his theory by collapsing into the thought what are really three distinct aspects of natural language. Frege requires this single entity to perform three distinct, and perhaps incompatible, theoretical jobs. First, thoughts are "that for which the question of truth arises." Second, they are "the senses of declarative sentences," and are differentiated by the modes of presentation of the objects which they are about. Third, they are the referents of 'that'-clauses following psychological verbs. Frege's problem with indexicals stems principally from a conflict between the first two of these characterizations.

38 See "Frege on Demonstratives." Perry here is using 'demonstratives' to cover the whole range of indexicals. As will become increasingly obvious, the present chapter is primarily an application of Perry's analysis of indexical senses to the question of the nature of context.
When he says that thoughts are those things for which the question of truth arises, Frege makes them the primary bearers of truth values; as we have seen, utterances of sentences are supposed to be true derivatively, because of the truth of the thoughts they express. Recognizing the central role of truth in logic, and wanting to defend logic against what he saw as the rampant psychologism of his era, Frege insisted that that to which truth pertained was something outside space and time and independent of human mental processes.

Now, insofar as a thought is "the sense of a declarative sentence," it is what various speakers of a language understand in common when they understand a sentence. It is also what a translation of a purely factual sentence (as opposed, e.g., to a piece of poetry or an exclamation) is intended to preserve. Thus it explains both what my understanding of a law of physics or the Pythagorean Theorem has in common with your understanding of them, and also what my understanding of those things has in common with that of the scientist or mathematician who first formulated them, regardless of the language and circumstances under which they were first formulated. Because it includes the mode of presentation of any object that it makes a statement about, a thought is linked to the epistemic value of a sentence, that which distinguishes the meaning of "the Morning Star is the Evening Star" from "the Morning Star is the Morning Star". We can investigate what senses sentences express by observing how those sentences, when understood, can cause individuals to form certain beliefs; These observations are what provides the criterion of difference for senses which Frege often uses. Perry formulates this criterion as follows:

If A understands S and S', and accepts S as true while not accepting S', then S and S' have different senses. 39

This criterion can be used to show that there are uses of natural language involving indexicals which have senses different from anything which would be provided by a Fregean context of the kind described above.

As Frege's discussion of the contrast between indexicals and proper names suggests, the difference between senses which are supplemented from context and those which are not shows up in how we learn to use the words involved. Consider three kinds of cases of "accepting a sentence as true." Learning English equips me to understand all of the following sentences whenever I hear them used: 'Two is less than three.' 'The lightest chemical element is combustible.' 'I am hungry.' But the superficial uniformity in these

39 Ibid., p. 5. We have seen an application of this criterion already in the Gustav Lauben example.
cases disappears when we consider how we attach truth values to uses of those sentences. If someone sincerely claims that 'Two is less than three' expresses something false, that is evidence that they have not understood the meanings of those words. When they gain a proper understanding of the words they will realize that those words of English express a different sense than they thought—a sense which is true. If someone understands the words correctly and believes that what 'Two is less than three' expresses is true when used on one occasion, they will believe it on every occasion. Now consider the second case. If I believe what is expressed by 'the lightest chemical element is combustible' on one day, I can still understand all the words in the same way—and thus understand the sentence as having the same sense—and yet not believe it the next day. This can happen if I have changed some belief, for example about which element is lightest. But now consider the third case. I can believe that my daughter is telling the truth when she says "I'm hungry" on one day and not believe her when she says "I'm hungry" the next day. I understand the sentences in the same way both times, I don't change any of my relevant beliefs between the two occasions, yet I believe that one utterance expresses a truth and the other does not, so they must express different senses. I can believe that what she said the first time was true without believing that it contradicts what she said the second time. In each of these three cases the change in attitude indicates a different kind of change: in the simple mathematical case it indicates a change in language competence; in the descriptive empirical case it indicates a change in belief; in the indexical case it indicates a change in the sense expressed.

Now recall how Frege explains the indexical case: a sentence like 'I am hungry' can be used to express different thoughts on different occasions because the sentence itself only expresses a thought when it is supplemented by something additional that is provided by knowledge of the context of use. Consider, for example, a use of the sentence 'Today is sunny'. What must context contribute to allow that sentence to express a complete thought? Since the only things that can combine to form a sense are themselves senses, the context of utterance must contribute a sense of the day on which the sentence is uttered. This would make things work out right, since on different days, different senses would be contributed with the result that different thoughts would get formed. The difficulty is identifying which sense of the day of utterance the context contributes. We are, of course, in the habit of identifying days by their dates on the Gregorian calendar, but there are an unlimited number of identifying properties that correspond to any given day so we have not specified what someone understands by an utterance of 'Today is sunny' until we have specified which of those senses they have grasped—different senses make different thoughts. Failure to know the calendar date in no way impairs a person's ability to judge
the truth of an utterance of 'Today is sunny', so perhaps some other way of specifying the
day is involved in such cases.\footnote{Intuitively plausible candidates for identifying properties of days are such things as:
being the first day the Dow closed above 6000, the day so-and-so was born, etc. Since the
spin-rate of the Earth is gradually slowing over time, at some level of precision each day
has its own distinctive length—another basis for a unique description. Few people, of
course, will know that a given date has any of these distinguishing properties.}

Perry considers the case of Rip van Winkle. When Rip returns to his village after his
twenty-year nap, he can certainly say something true when he says "Today is sunny." The villagers will understand exactly the claim he is making, although if 'today' is
understood as contributing some unique description of the day, it will be very difficult to
explain the agreement between Rip and his audience over the meaning of his utterance. Rip
thinks the day of utterance is Oct. 31, 1770; his audience knows it is Oct. 30, 1790. The
date is the most obvious unique description of a given day, but perhaps, it might be
suggested, Rip and the villagers share some other way of conceptualizing that day. But Rip
has completely lost track of time; he has many beliefs about that day—he thinks it is the
day after he went to sleep, three days before his wife's birthday, a week after the mayor
was re-elected, etc.—all of which are false, and none of which are shared by his audience.
Make Rip's state of misinformation as bad as you like, he can still use 'today' to refer to a
determinate day and say something true about it. The same would even hold if everyone in
town had slept for twenty years and was similarly misinformed. There doesn't seem to be
any description available, nor any needed, to account for the agreement between Rip and
his audience about the truth claim Rip is making.\footnote{It might be suggested that the sense of 'today' could be something like 'the day on which I
am speaking to you'—but even if this circumstance were unique to a single day, it would
only push the problem back a level, and exactly parallel problems would arise in attempting
to give a unique description to express the senses of these uses of 'I' and 'you' (see below,
note 40). As we have already seen with Russell, the meaning of one context-sensitive
expression can plausibly be given in terms of other context-sensitive expressions. The real
issues only arise in the attempt to give the meaning of context sensitive-expressions in a
way that eliminates or explains context-sensitivity itself.} The meaning of 'today' in Rips mouth
does not seem to involve any description of the day at all. This example, then, support the
thesis that there is a complete disconnection between an utterance's ability to express
something true about a determinate object, given an appropriate context, and the
expressible, conceptual beliefs that those who understand that utterance have about that
object.
Perry divides this thesis into three parts. The irrelevancy of belief is the claim that what Rip believes about the day on which he is speaking, or whether or not any of these beliefs are shared by his audience, makes no difference at all to the truth-bearing capacity or truth-content of his use of 'Today is sunny'. The nonnecessity of belief is the claim that Rip can make a true statement with 'Today is sunny' without having any belief at all about that day which didn't apply equally to indefinitely many other days. Finally, the nonsufficiency of belief is the claim that if Rip expresses a thought with 'Today is sunny' in a particular context, while lacking a context-independent identifying belief about that day, then no matter what anyone else believes outside that context they cannot grasp or express that very same thought.

I take it that consideration of Rip van Winkle-type cases shows that the first two of these claims are fairly obviously true. Neither having false identifying beliefs about an object, nor lacking any identifying belief at all, is an obstacle to using an indexical to refer to it. Context is obviously making a contribution to what is being expressed, but that contribution is not a sense that can be expressed descriptively. There seem to be other ways that objects can be "given" which don't fit Frege's account, but which are nonetheless able to combine with senses of predicates to produce complete thoughts.

The third claim is stronger, and not so obvious, but is important to understand because it leads to the conclusion that some thoughts can only be grasped in specific contexts, and this would contradict basic assumptions Frege makes about what kinds of things can be true and how context functions in specifying thoughts.

Frege says it is possible to express the same thought expressed by 'Today is sunny' on one day by using 'Yesterday was sunny' on the next. Let us symbolize the sense of 'Today is sunny' relative to a given context as \([ ( [X] ) \) is sunny], where [X] is the sense supplied by the context for 'today'. Grasping that sense the following day would only be possible if [X] is a sense which can be grasped in different contexts, and if understanding 'today' and 'yesterday' involves knowing how to do that. Frege's remarks about indexicals have suggest, as we have seen, that using an indexical involves a three step process of recognizing a particular kind of incompleteness in a thought, using knowledge of some feature of context to supply an appropriate completing sense, and then using that sense to complete the thought. In order for [X] to meet the requirements for such a sense it must be singular.

---

42 Exactly parallel examples support the same conclusion in regard to non-temporal indexicals; e.g. a disoriented person can use 'here' to make true statements about a place without knowing where that place is, an amnesiac can use 'I' to refer to himself, etc.
43 In the following argument I use square brackets to form names of senses.
sense constructed from concepts. In that case, it would have the form: \([ \Delta ]\).\(^{44}\) Thus the thought expressed will have the structure: \(\([ \Delta ]\) \) is sunny\). In any context, that thought could be expressed by a sentence with the sense \(\([ \Delta ]\) \) is sunny\) even if that context were one where 'today' or 'yesterday' would not supply the needed sense. Frege expresses great confidence that, having grasped a thought, a form of words can be found to express it, but even if the language did not contain the words needed to do this, new expressions could be added. Our ability to express the same thought with 'today' and 'yesterday' implies mutual knowledge of the sense \([ \Delta ]\) and this is all that is required to define a new expression which has \([ \Delta ]\) as its sense. But we have already seen that if 'The \(\Delta\)' is any non-indexical expression referring to a day, a person in Rip van Winkel's situation could, without being irrational, believe 'Today is sunny' while doubting 'The \(\Delta\) is sunny'. So the sense expressed by 'Today is sunny' in context cannot be the same as the sense expressed by any sentence which designates that day descriptively. \([ \Delta ]\) must therefore be some other kind of sense, or to put it another way, the mode of presentation involved in the thought expressed must be unlike those involved in non-indexical thoughts. And if this is so, there is no particular reason to believe that it would be possible to grasp this particular thought in any other context.

The fact that we are often willing to substitute a name or definite description for an indexical expression does not automatically show that they have the same sense; that two distinct senses refer to the same object is, as Frege pointed out, a piece of knowledge—something we can discover about the world. The fact that such substitutions are not \( always \) acceptable proves that these expressions need not have the same sense. But there is nothing in Frege's theory to explain what this new kind of sense, or mode of presentation, expressed by indexicals, might be.

On the other hand, Frege's account does seem to be correct in allowing that different indexical-containing sentences \( in \ the \ same \ context \) could express the same thought. Gustav Lauben would believe what he expressed with 'I am wounded' just in case he believed what 'you are wounded' expressed when spoken to him in the same context. The three step

\(^{44}\) I use upper-case Greek letters to name concepts, and inverted commas to form names of expressions which express senses. \([ \Delta ]\) is the sense of a definite description which refers to an object if and only if that object alone falls under \(\Delta\). Frege says we can grasp the thought expressed by a sentence containing 'today' if we know on which day it was used; I am taking \(\Delta\) to be any property of that day which, if one knew it, one would be able to grasp the thought in question. Since the thought is, by assumption, determinate, \(\Delta\) must determine the object it is about, and so we are justified in using it to form a Fregean proper name with the sense \([ \Delta ]\).
procedure for identifying the thought also seems to be right—the indexical directs us to an object in the context, perception provides a sense of that object, and that sense completes the thought. The problem comes from restrictions on what is supplied by context in the second step, the "mode of givenness" which distinguishes one sense of an object from another. In what other ways, besides descriptively, can an object be "given"?

Frege's picture is plausible only if one assumes that knowing how to use an indexical involves having the ability, on any given occasion, to give a sense (the same one for everyone who understands the same thought), that contains a mode of givenness unique to the object that the thought is about. But although there are any number of distinctive things about the day on which Rip says 'Today is sunny', the only distinctive thing about that day which is involved in his audience being able to judge the truth of his statement is that it is the day on which they themselves are doing that very judging. They know that they are all understanding 'today' in the same context, but specific descriptive information about what context that is, and its relation to other contexts is irrelevant to their ability to grasp the thought which Rip expresses.

A thought about an object can only be grasped when that object is "given" in some way or other. In Rip's case, a day is "given" by the fact of its being the day on which his utterance of 'Today is sunny' took place. Modifying Russell's way of describing indexical reference, we can put it another way. What is distinctive and relevant about that day is that a group of language users are able to focus on it, select it by their acts of attention, as the day that something is being said about. If those acts of attention had occurred on a different day, that different day would have had that distinctive feature of being the focus of attention and would have been the day given in the thought expressed. Whatever else they might doubt about that day, if they understand the word 'today' they cannot doubt that it is the day that is then and there being talked about. Here we have a mode of presentation which is unavailable in other contexts. The day in question cannot be given in that same way on any other day. An account of context should explain how such modes of givenness individuate objective thought contents, making it possible for them to have a truth value.

So here we have a kind of thought which, if individuated by the mode of givenness it contains, can only be grasped on a single day, because it contains a mode of presentation which involves the co-existence of a speaker and audience engaging in particular conscious acts on that day. Unlike Frege's preferred modes of givenness—which are independent of

---

45 Perry endorses this interpretation suggested to him by Dagfinn Føllesdal (The Problem of the Essential Indexical, p. 15, n. 3).
particular conscious acts and universally available—these modes are only available to certain agents in certain circumstances. But then access to the thoughts of which these senses are a part is also dependent on conscious acts of individuals. If there are such thoughts, which are capable of being true, then Frege is deeply mistaken about the nature of truth-contents and how language functions in their expression.

The root of the problem, I think, lies in Frege's anti-psychologism. He was adamantly opposed to any suggestion that psychological processes had any bearing on the truth-content of logical and mathematical statements, and he carried this attitude over to his generalized account of linguistic meaning. His defense of the objectivity of mathematics took the form of claiming the mind-independence of the property of truth, and this led him to metaphysical claims about the nature of the entities that can have the property of being true or false. These claims are articulated in his doctrine of the three realms of objects, ideas and senses. In trying to enforce a complete distinction between the ideas that individuals associate with sentences and the senses which are timeless and universal, he seems to have left out an important dimension of language that somehow bridges the gap between the personal and ephemeral world of ideas and the objective world of true thoughts. A hint of such a bridge is visible in Frege's explanation of the notion of objectivity in terms of the interpersonal aspect of natural language—his talk about a "common store of knowledge" passed from generation to generation, and about the publicly accessible image in the telescope. But this kind of objectivity falls short of the metaphysical independence of the third realm. Natural language might turn out to be objective, not because it is independent of any and all conscious experiences and mental capacities, but rather because it is independent of mental states of any particular individual, while nevertheless being dependent upon the shared experiences and capacities of a community. This kind of 'generic dependence' (dependence on "some conscious agents or other") may provide the best description of the special way of being given that characterizes the senses expressed by indexicals in actual use.46

Frege's Contribution to Understanding Indexicality and Context

Although I have argued that Frege's treatment of indexicals reveals the inadequacy of his explanation of the relation between linguistic meaning and the truth-content of statements,

46 In Ch. 5 and 6 we will see accounts of intersubjective objectivity in Peirce and Husserl which lay the groundwork for our eventual development, in Ch. 9, of just such an intersubjective model of objective reference with indexicals and the social elements of context needed to support it.
that treatment still contains insights, and is also valuable because it is a clearly stated defense of views of language that have continued to exercise a strong influence within the philosophy of language.

Frege's doctrine of the independent existence of thoughts is intended as a defense of the objectivity of knowledge against psychologistic relativism and the kind of skeptical empiricism which led Russell to restrict the range of direct knowledge of reality to sense data. The first step in this defense is the insistence that if language expresses truth at all, it does so by expressing thoughts which are intersubjectively available and typically are about objects which exist independently of any individuals' mental processes. The semantic import of this is captured in the Millian principle of referential objectivity. But Frege, like Russell, recognized that our knowledge has a perspectival aspect, which reflects our one-sided and partial grasp of objects, and so he argued that objective thoughts must be individuated, not only by the objects and predicates which they are about, but also by the kinds of access thinking agents have to those objects. Thus our semantic theory must consider not only the objectivity of our referential goal, but also the objectivity of our means of reaching that goal. Russell's contention that our intentions to refer objectively are always frustrated—since only sense data are ever "given" to us—is countered by Frege's insistence that objects are given to us in ways which, though admittedly perspectival ("one-sided and bound to a point of view," as in the telescope example) are still objective and public. This insight of Frege's is one which accords well with our intuitions about the objectivity of language and knowledge, and should be incorporated, if possible into our semantic theory. We might call it the principle of objective presentation. At the same time, we should not ignore the obvious empiricist rejoinder that these objective modes of presentation are themselves only available to individuals through subjective experience—the telescope image is, itself, an object which we each see from our unique, private perspective.\footnote{This iteration of modes of presentation of modes of presentation is, of course, one source of the notorious hierarchy of senses in cases of "indirect reference" which has caused some to reject Frege's whole account of senses as ontologically profligate.} The doctrine of objective modes of presentation may be an important part of a theory, but it is not yet a whole theory.

Another contribution Frege makes is a clear statement of the role context plays in supplementing our ordinary uses of language. Making the important distinction between the meaning of a word or sentence \textit{in itself} and what is expressed by the use of language \textit{in context}, he makes possible an exploration of the mechanics of context. His examples show that certain words carry with them the presumption of being supplied with specific kinds
of supplementation from context. His remarks about the role knowledge of the language plays in fixing the meanings of contextualized expressions suggests that part of learning a language is learning to extract certain kinds of information from context. These views hold the promise of a picture of context which honors Russell's correct understanding of human knowledge as perspectival and linked to individual experience without giving up the objectivity which Frege correctly stressed, and which the social nature of language seems to both demand and to insure. And yet the picture of context that emerges from Frege's consideration of indexical reference is seriously flawed.

In developing the consequences of his anti-psychologism, Frege moves from characterizing the objectivity of thoughts in terms of their intersubjective availability to the metaphysical doctrine of their independent existence in a third realm. His insistence on the timeless and independent existence of thoughts, and the senses of objects they contain, forced him to account for the perspectival aspects of human knowledge without reference to important features of human perceptual processes, or to the social contingencies of language use. Explaining the perspectival features of thought contents in term of the ways objects are "given" emphasizes the passivity of the knower in just the way that Russell's appeals to "data" and "givenness" do. This obscures the importance of the active role played by language users, a role which Russell at least acknowledges in pointing out the role played by the directing of attention in fixing the meaning of 'this'. For Frege's account of indexicals to work, context must automatically "give" an object in a single specific way to everyone who hears a given utterance about it; but this leaves it a mystery how the selection occurs from among all the possible ways in which that object could be given. What seems to be required is a mechanism by which language users actively select a referent by collaboratively selecting a "mode of presentation" for that referent, one which is objective in the sense of being intersubjectively grounded; this would constitute the new kind of objective sense which seems to be required by the use of indexicals to express true thoughts would seem to require. Such a mechanism would depend for its effectiveness on specific acts of directed attention guided by some shared component in language use which is learned along with the verbal expressions and grammar of a language.

Such a contextual mechanism would allow an utterance of 'I am wounded' to be understood by several people and to be judged by those people to be true, of a determinate individual at a determinate time, without requiring any senses of the objects involved which could be grasped outside that context. But within such a picture it is no longer appropriate to speak of the objects as merely "given;" it makes more sense to speak of several people sharing access to the object—being jointly able to get at the object because of its place in a
shared context. Here we can add more detail to our emerging picture of what context must encompass. Crucial to this mode of common access to objects is a shared set of perceptual capacities and predispositions, acquired socially along with language, allowing for *shared* focusing of attention. This is the kind of "mode of presentation" which seems to be most characteristic of indexical reference: being jointly attended to by several language users in a single context. But such a thought-completing sense cannot be recognized by any theory of language which, like Frege's, makes the primary bearers of truth-content timeless and metaphysically independent of human conscious acts and capacities. We must look elsewhere for a theoretical framework that can accommodate contextualized thoughts of the kind expressed with indexicals.

When we now turn to Peirce we meet for the first time a theory of indexicality which recognizes the dependence of meaning on the contingencies of human psychological and perceptual processes while avoiding the trap of the kind of private context we saw in Russell's account, and thus preserving the objectivity of meaning, reference and truth by emphasizing the intersubjective and social aspects of language.
Examples of Psychologicist Philosophers:
Helmholtz: Philosophy is really a part of Psychology
(also Wundt and Schröder?)
Lipps, H., Grundzüge der Logik, 1893
cf. Twardowski's remarks on psychologism in "Psychology vs, Physiology and Philosophy" in Selected Writings

Summary: Frege was interested in how sentences are capable of containing and transmitting knowledge, i.e. the cognitive values of sentences, and he recognized that a Millian account of the meaning of names could not explain the cognitive values of true identity statements. He introduced senses of names and via compositionality, senses of sentences, to fill the need for a finer-grained description of the meanings of sentences that would display those differences. The underlying epistemological project then led him to identify the sense of a sentence with the content of the belief that it caused and some definite timeless description of that content which should serve as the stable bearer of truth in an inferentially structured body of knowledge. Whatever its merits in explaining the relation of language to mathematical and (certain kinds of) scientific knowledge, it is not yet fine-grained enough to explain the difference in cognitive value between an utterances of "I am hungry" by different people. If the cognitive value of "I am hungry" is given by some descriptive sense (the unique person who is D is hungry) then the belief expressed would lead a person sincerely using that sentence to begin checking around to find out who (if anyone) is the unique D, in order to feed that person.
Frege saw that the cognitive significance of a sentence is influenced both by what objects that sentence is about, and also by how those objects are picked out. This takes note of the fact that there are any number of ways of describing a given object, and knowing an object in one of these ways does not guarantee knowing it in another. Perry has seen that the cognitive significance of certain sentences (those containing indexical expressions) is also influenced by the perspective from which the sense is grasped. Frege's senses correspond to different ways of knowing objects and Perry's roles correspond to different ways of grasping senses. Given senses, we can explain the difference between the cognitive values of "Hesperus is Phosphorus" and "Hesperus is Hesperus," given roles, we can explain the difference between the cognitive value of "I am hungry" and any sentence of the form "the person who is D is hungry."

This shows that a purely Fregean system is inadequate to giving a complete account of natural languages containing indexical expressions, but how serious a problem this is will depend on if there are areas of human knowledge that are insulated from indexicality. The hope that context sensitivity might be eliminated from significant areas of knowledge has been called into question by arguments to the effect that many important uses of indexicals are not eliminable in favor of non-indexical expressions. Any Fregean hope of a way of reducing indexical expressions to descriptive ones seems to frustrated by the need, felt by Aristotle, Mill and Russell, to explain important philosophical concepts by using words like "I", "here", "this" and "now."

**Three strategies for dealing with context sensitivity**

At the end of the Russell section we distinguished two strategies one might adopt if one felt the need to give an explanation of the meanings of indexical expressions. The general Fregean approach of trying to eliminate such expressions in favor of timeless and non-mind dependent entities suggests that the strategy we called reduction owes its popularity to a simpler strategy of simple elimination. Frege sought to narrow the scope of his
investigation to cover just the part of language that pertained to the expression of knowledge. Accordingly he suggests that he need not consider those features of language that are responsible for arousing emotions and fleeting mental images. Nor does he need to consider language used in fiction. There is no means of rendering demonstrative expressions in Frege's formal language and one suspects that he might have assumed that an ideal language could dispense with indexicality just as it could dispense with emotional tone and fictional reference.

Thus three: elimination, reduction, contextualization\/

Frege, Russell, Mill

While Frege and Russell share a great deal in terms of basic motivation and technique, including the centrality of their common project of reducing mathematics to logic, their deep differences become especially visible in their treatments of indexicals. They both begin their early work in reaction to Mill, and they share a rejection of Mill's empiricist treatment of mathematics. But the details of that reaction diverge immediately, although the techniques employed in their respective projects are very closely related. Where Russell's project is to rescue empiricism by removing mathematical knowledge from the field of what empiricism should be expected to explain, and thus save it from the implausibility of Millian mathematical theory, Frege sought to expand the field of knowledge that could be explained on the model of logical and mathematical truths. Where Russell's empiricist orientation led him to seek the meaning of most basic expressions in the immediate flux of perception, Frege, unencumbered by such empiricist prejudices, saw such forms of explanation as hopelessly tied to the same psychologism which had led Mill to his objectionable mathematical theories.

{{The same applies to words like 'this' you, I ... As Perry says, "There is no reason to believe we are on each occasion each equipped with some non-demonstrative equivalent of}}
the demonstratives we use and understand." (p. 17) If the cognitive value of a word is what we understand by it when it is used, what its use contributes to our understanding of a sentence in which it occurs, then the cognitive value of "today" seems to be, not a description of an object, but a rule which takes us from an utterance in a context to a specific object. But such a rule is not a Fregean sense, it has no unique descriptive content. A sentence like "Today is Tuesday" embodies the same rule each time it is used, although it sometimes expresses a truth and sometimes a falsehood. If the rule were a Fregean sense, its truth value would never change.}

{{The mention of the important role perception plays in the supplementation of incomplete senses suggests the possibility that the role perception plays is not the conceptual classificatory one we have been assuming, but to supply some other mode of presentation which is not fundamentally descriptive. Frege's use of the term "mode or way of being given" is unfortunately vague. We can only grasp what he has in mind by seeing how he uses the terminology of givenness in different situations. There are some very specific restrictions imposed on what can be a "mode of givenness" which can be contained in a thought. There is a certainly a sense in which objects are "given" to us just by the fact that they are being perceived. But the fact of being perceived is something that cannot be part of a sense. Frege is very clear that senses have a kind of being which is inde.}}

{We can express thoughts about objects using indexicals while disbelieving any thought in which that object was designated by properties which were not relativized to that context.\textsuperscript{48} This forces the conclusion that, if saying something true involves expressing a

\textsuperscript{48}This is immediately apparent as soon as one considers the uniqueness requirement for an identifying description. If the object being described is a spatio-temporal one, verification that it is the only object that falls under a non-context relative description would require knowledge of objects outside the current context (in fact, knowledge of all objects); But this kind of knowledge is not required for picking out objects with indexical expressions. This is one reason an indexically identified thought can be believed while any non-indexical thought about the same object can be doubted if the required extra-contextual information is lacking.
thought, then thoughts about objects can be expressed in ways that identify those objects only relative to a context and not through timeless and placeless senses.}

{} Because the modes of presentation of mathematical object are purely conceptual, fully understanding a mathematical statement just means being able to judge whether it is true. The same applies to statements of logic and geometry. But to extend this account to natural language generally (or even to the language of all of physical science) will eventually involve considering sentences like "This is Molybdenum," "This is a meter," "It's raining today" or "I am hungry." When this is done one is faced with perceptual "ways of being given." These are certainly sentences for which the question of truth arises, and they are also sentences by which we understand something when we hear them, and which may cause us to hold certain beliefs, but they are not evaluated for truth in the same way that the Pythagorean Theorem is. This is partially because the objects referred to are given or presented in such a way that it is possible to understand what is being said without knowing whether it is true.}

{} But in grasping the thought [( [The $\Delta$] ) is sunny] one has necessarily grasped the sense [The $\Delta$] and so can entertain the thought [ [The $\Delta$] is [The $\Delta$] ], and also the thought which would be expressed by 'Today is the $\Delta$' in that context. If knowing how to use 'Today' means knowing how to extract [The $\Delta$] from that context in order to supplement the incomplete sense of 'Today is the $\Delta$', then those two thoughts would be identical, and no one could believe one without believing the other. But it looks like this can indeed happen.

Even if there were no existing words in that language to express [$\Delta$], having grasped it, there is nothing to prevent adding a new expression to the language to express it. Frege's claim that thoughts we can communicate in one context using 'today' can be communicated in another context using 'yesterday' amounts to the claim that those who know how to use those words to communicate can obtain from both contexts a common sense. Learning to use words like 'today' and 'yesterday' includes learning how to do that. Knowing that someone else has grasped the same sense you have in the same situation is all that is required for assigning an expression to that sense: "Let's give today the name 'the $\Delta$'. Armed with this expression [Today is the $\Delta$] can be expressed, as well as [the $\Delta$ is the $\Delta$] and judgements formed with those contents. But these contents cannot be the same thoughts since any given person might doubt the truth of 'Today is the $\Delta$' while not doubting 'the $\Delta$ is
Since $\Delta$ is any context independent identifying property, knowledge of which could be provided by a context to complete the sense of an utterance using 'today', no such sense can be what completes the thought expressed by 'Today is $\Delta$', nor of 'Today is sunny' or any other sentence containing 'today'.

---

49Not knowing what time it is would not compromise a speaker's ability to use 'today' to express a thought, but if some time had passed since the name 'the $\Delta$' had been coined, and if the speaker did not know whether it was before midnight or after, she might not know if the sense being contributed by the context for 'today' was still [the $\Delta$]. //parallel case for 'I'//

50